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# Usefulness of FDG-PET imaging for the radiotherapy treatment planning of pyothorax-associated lymphoma

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Pyothorax-associated lymphoma (PAL) is a non-Hodgkin's lymphoma developing in the pleural cavity after a long-standing history of chronic pyothorax (CP). F-18 fluorodeoxyglucose positron emission tomography (FDG-PET) imaging is a useful modality for determination of disease extent of various malignant tumors, including malignant lymphoma, but there have been no reports describing the usefulness of FDG-PET imaging in PAL. Here we report a case of PAL that relapsed after chemotherapy and was successfully treated by radiotherapy. FDG-PET imaging revealed that the tumor was localized to a soft-tissue attenuation mass behind the CP cavity in the right thorax, but did not infiltrate the CP cavity. A total dose of 40 Gy was administered to the area that included the PET-positive lesion, instead of including the entire CP cavity in the radiation field. Although computed tomography (CT) showed a residual mass, no FDG uptake was indicated by FDG-PET imaging performed just after the end of radiotherapy, and additional irradiation was not performed. No sign of relapse was found by FDG-PET imaging 3 months later. FDG-PET imaging was useful for both the planning of radiotherapy and assessing the treatment response of PAL.

**Key words:** pyothorax-associated lymphoma, FDG-PET, radiotherapy